



# 无人机载荷用高性能红外光学

## SWaP优化设计满足机载要求

高性能

重量轻

紧凑

可用于中长波红外相机

# 任何需要，我们都有应的镜头

凭借数十年在无人机领域中长波红外镜头知识和经验，Ophir赢得了在该领域世界领先的设计和制造的美誉。Ophir开发和交付了大量的无人机用中长波红外镜头组件，包括定焦、电动调焦和连续变焦镜头。Ophir提供了一个在军事、安全和应急领域使用的全球化的无人机载荷的解决方案。

我们内部设计团队和国防、商业用户一起开发和优化设计针对无人机有效载荷平台的特定尺寸、重量和功率(SWAP)限制问题的镜头，并针对性的开发出具有无与伦比的光学性能的相应产品。

## 主要特点

- 镜头尺寸小，适合微型框架平台
- 超轻量化连续变焦和定焦镜头
- 光学性能高
- 功耗低
- 为无人机电载、手持设备设计
- HD,LRHC多种膜系选择
- 快速视场切换
- 连续变焦全程F#固定不变
- 光轴稳定精度高
- 折叠光学技术
- 适用于主要的中长波红外探测器
- 衍射极限光学设计
- 无热化补偿
- 全程变倍清晰
- 预设，离散特定变倍位置
- RS485 或RS232 串口控制

## SupIR 16-180 f/3.6, 电动连续变焦 680389-001

适用于中波制冷640x512,  
10um相机



Cooled  
MWIR

### WFOV(16mm)

HFOV[deg]	640x480
10μ	22.6°

### NFOV(180mm)

HFOV[deg]	640x480
10μ	2°

Property	Value	
Optical	WFOV	NFOV
Focal length	16mm	180mm
F/#	3.6	
Back focal length	23.08mm in air	
Cold stop to FPA distance	12mm	
Minimum focusing range	5m	50m
Mechanical		
Max. Dimensions	Length 121mm; Width 70mm; height 102mm	
Weight	460gr	
Electrical		
Drive voltage	6-12VDC	
Current consumption	< 0.5A average, 1.0A peak	
Communication interface	RS422	

# LightIR 20-275mm f/5.5, 电动连续变焦 680314

适用于中波红外制冷型相机



Cooled  
MWIR

## WFOV(20mm)

HFOV[deg]	320x240	480x384	640x512
20μ	19.4°	28.0°	
15μ	14.5°	20.9°	28.0°

## NFOV(275mm)

HFOV[deg]	320x240	480x384	640x512
20μ	1.3°	1.9°	
15μ	1.0°	1.5°	1.9°

Property	Value	
Optical	WFOV	NFOV
Focal length	20mm	275mm
F/#	5.5	
Back focal length	23.52mm in air	
Cold stop to FPA distance	19.7mm	
Minimum focusing range	5m	50m
Mechanical		
Max. Dimensions	Ø58mm X 67.1mm	
Weight	264gr	
Electrical		
Drive voltage	12VDC	
Current consumption	0.2A average, 1.0A peak	
Communication interface	RS485, RS422	

# SupIR 15-60mm f/1.4, 电动连续变焦 680164

Uncooled  
LWIR



## WFOV(15mm)

HFOV[deg]	160x120	320x240	384x288	640x480
25μ	15.4°	31.5°	38.4°	
17μ	10.4°	21.1°		44.2°
12μ		14.8°		30.2°

## NFOV(60mm)

HFOV[deg]	160x120	320x240	480x384	640x512
25μ	3.8°	7.6°	9.2°	
17μ	2.6°	5.2°		10.4°
12μ		3.7°		7.3°

Property	Value	
Optical	WFOV	NFOV
Focal length	15mm	60mm
F/#	1.4	
Back focal length	≥ 25mm in air	
Minimum focusing range	1m	2m
Mechanical		
Max. Dimensions	Ø62mm X 83.5mm	
Weight	500gr	
Electrical		
Drive voltage	6-12VDC	
Current consumption	0.2A average, 0.5A peak	
Communication interface	RS422	

# LightIR 15-75mm f/1.2, 电动连续变焦 680386

适用于10-12um像元尺寸长波  
非制冷相机

Uncooled  
LWIR



**HD  
FORMAT**

### WFOV(15mm)

HFOV[deg]	320x256	480x384	640x512	1024x768	1280x1024
25μ	32.1°	48.4°			
20μ	24.8°	38.0°	52.0°		
17μ	20.9°	31.9°	43.4°		
12μ	14.7°	22.2°	29.9°	49.7°	64.4°
10μ			24.8°	40.6°	52°

### NFOV(75mm)

HFOV[deg]	320x256	480x384	640x512	1024x768	1280x1024
25μ	6.0°	9.0°			
20μ	4.9°	7.2°	9.6°		
17μ	4.1°	6.2°	8.2°		
12μ	2.9°	4.4°	5.8°	9.2°	11.4°
10μ			4.9°	7.7°	9.6°

Property	Value	
Optical	WFOV	NFOV
Focal length	15mm	75mm
F/#	1.2	
Back focal length	20.76mm in air	24.28mm in air
Minimum focusing range	7m	18m
Mechanical		
Max. Dimensions	Ø75mm x 88mm	
Weight	320gr	
Electrical		
Drive voltage	6-12VDC	
Current consumption	<0.15A average, 0.3A peak	
Communication interface	RS485, RS422, RS232	

\*Adapters for different cameras are available upon request

# SupIR 7.5mm f/1.2, Fixed Focus 680331

Uncooled  
LWIR



**HD  
FORMAT**

HFOV[deg]	160x120	320x240	384x288	640x480	1024x768
25μ	31.0°	63.9°	78.3°		
17μ	21.0°	42.5°	51.4°	90.9°	
12μ	14.8°	29.7°	35.8°	61°	106.5°

## SuplR 13.6mm f/1.0, Fixed Athermalized 680412

Uncooled  
LWIR



HFOV[deg]	160x120	320x240	384x288	640x480
25μ	16.8°	33.3°	40.0°	
17μ	11.5°	22.8°	27.3°	
12μ	8.1°	16.2°	19.3°	32.0°
10μ	6.8°	13.5°	16.2°	29.8°

## SuplR 19mm f/1.1, Fixed Athermalized 65221

Uncooled  
LWIR



**HD**  
FORMAT

HFOV[deg]	160x120	320x240	384x288	640x480	1024x768
25μ	11.9°	23.6°	28.3°		
17μ	8.1°	16.1°	19.3°	32.1°	
12μ	5.7°	11.4°	13.7°	22.7°	36.3°

## SuplR 25mm f/1.2, Fixed Athermalized 680108

Uncooled  
LWIR

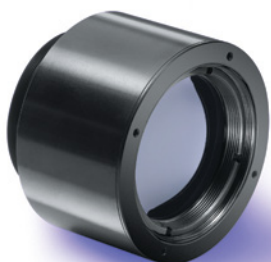


**HD**  
FORMAT

HFOV[deg]	160x120	320x240	384x288	640x480	1024x768
25μ	9.1°	18.2°	21.8°	36.4°	
17μ	6.2°	12.4°	14.9°	24.8°	
12μ	4.4°	8.7°	10.5°	17.5°	27.9°

## SuplR 35mm f/1.2, Athermalized Manual Focus 680111

Uncooled  
LWIR



**HD**  
FORMAT

HFOV[deg]	160x120	320x240	384x288	640x480	1024x768
25μ	6.5°	13.0°	15.5°		
17μ	4.4°	8.9°	10.6°	17.6°	
12μ	3.1°	6.3°	7.5°	12.5°	19.7°



### 关于Ophir红外光学

Ophir Optronics Solutions LTD.是MKS公司 ( NASDAQ:MKSI ) 的子公司，其拥有数十年的知识和经验，是世界领先的设计和和生产高性能短波红外、中波红外和长波红外镜头和光学元件的公司。Ophir利用先进的技术、创新的工艺和设计为国土安全、监视、国防、汽车和商业应用提供了全球性的解决方案：从红外光学元件到复杂的定焦、电动调焦、连续变焦镜头组件。

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